

What is claimed is:

[Claim 1]

1. A rear lighting system applied to an automotive vehicle, of the type comprising:

at least one supporting element (1);

a plurality of light sources (2) assembled on said supporting element (1), which is at least one in number; and

a control means (3) electrically connected to said light sources (2) to actuate them such that the light sources (2) can emit with at least two light intensity levels in order to carry out at least two corresponding lighting functions, one of which consists of acting as brake lights;

characterized in that said control means (3) comprise detection means for detecting a malfunctioning of at least one of said light sources (2), and in that the control means (3) are adapted to compensate for a corresponding variation in the total light intensity provided by the system due to said malfunctioning by means of actuating or deactivating at least another one of said light sources (2) and/or increasing or decreasing the current to be made to circulate through at least said other light source (2) or another different one.

[Claim 2] 2. A system according to claim 1, characterized in that the light sources (2) of said plurality of light sources (2) are divided into a first group, or main group, and a second group, or spare group, which light sources (2) are usually switched off but at least a part of which are actuated by the control means (3) to compensate for the malfunctioning of any of the light sources (2) of the first group, if necessary.

[Claim 3] 3. A system according to claim 1, characterized in that the light sources (2) of said plurality of light sources (2) are actuated all at the same time by said control means (3), and when a malfunctioning of one of them occurs, the control means (3) compensate for a corresponding variation in the total light intensity provided by the system due to said malfunctioning by means of increasing or decreasing the current to be made to circulate through all the light sources (2).

[Claim 4] 4. A lighting system according to claim 1, characterized in that another one of said functions consists of acting as anti-fog lights.

[Claim 5] 5. A system according to claim 4, characterized in that the light sources (2) emit with a third light intensity level to carry out a third lighting function consisting of acting as sidelamps.

[Claim 6] 6. A system according to claim 5, characterized in that said light sources (2) are LEDs (2).

[Claim 7] 7. A system according to claim 6, characterized in that said supporting element (1) is a rigid or flexible printed circuit, and in that said LEDs (2) are welded to electroconducting tracks thereof.

[Claim 8] 8. A system according to claim 6, characterized in that the control means (3) comprise an electronic system, comprising at least one microprocessor, associated to said detection means.

[Claim 9] 9. A system according to claim 8, characterized in that it is at least partially arranged inside a casing closed with a cover, at least partially transparent, situated in the rear part of a vehicle.

[Claim 10] 10. A system according to claim 9, characterized in that the entire system is arranged inside said casing.

[Claim 11] 11. A system according to claim 9, characterized in that the part of the control means (3) are arranged in another part of the vehicle different to that of said casing.

[Claim 12] 12. A system according to claim 11, characterized in that said electronic system forms part of a computer on board said vehicle.

[Claim 13] 13. A system according to claim 1, characterized in that the control means (3) control said current to be made to circulate through at least said other light source by means of said electronic system.

[Claim 14] 14. A system according to claim 1 or 3, characterized in that the control means (3) carry out said increase or decrease of the current to be made to circulate through at least said other light source (2), another different one, or all the light sources (2), by means of Pulse Wave Modulation (PWM) techniques.

[Claim 15] 15. A system according to claim 1, characterized in that the control means (3) are adapted to actuate at least one of said light sources (2) to emit with said light intensity level in order to carry out said function consisting of acting as brake lights, according to a corresponding detection of a sudden speed reduction of the vehicle not caused by actuating a brake pedal thereof.

[Claim 16] 16. A system according to claim 15, characterized in that said sudden speed reduction of the vehicle is detected by means of an accelerometer included in the system.

[Claim 17] 17. A system according to claim 15, characterized in that said sudden speed reduction of the vehicle is detected by means of an inclinometer included in the system, detecting a corresponding inclination of the vehicle caused by the sudden speed reduction.

[Claim 18] 18. A system according to claim 15, characterized in that said sudden speed reduction of the vehicle is detected by means of a corresponding consultation of the control means (3) with a computer on board the vehicle.

[Claim 19] 19. A system according to claim 2, characterized in that the control means (3) are adapted to actuate at least one of said light sources (2) to emit with said light intensity level in order to carry out said function consisting of acting as anti-fog lights, according to a corresponding detection of fog in the environment surrounding the vehicle.

[Claim 20] 20. A system according to claim 19, characterized in that said detection of fog is carried out by means of at least one fog sensor device.

[Claim 21] 21. A system according to claim 20, characterized in that said fog sensor device comprises at least one humidity sensor and one temperature sensor.